

Name: \_\_\_\_\_

### pa1106: Factoring with box when $a = \text{prime}$ (v1)

#### Example

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

|    |        |        |
|----|--------|--------|
| *  | x      | -6     |
| 2x | $2x^2$ | $-12x$ |
| 3  | 3x     | -18    |

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

#### Question 1

Use the box to factor  $3x^2 + 31x + 56$ .

|    |        |    |
|----|--------|----|
| *  | x      |    |
| 3x | $3x^2$ |    |
|    |        | 56 |

ANSWER:

**Question 2**

Use the box to factor  $5x^2 - 3x - 14$ .

|    |        |     |
|----|--------|-----|
| *  | x      |     |
| 5x | $5x^2$ |     |
|    |        | -14 |

ANSWER:

**Question 3**

Use the box to factor  $7x^2 - 61x + 40$ .

|   |  |  |
|---|--|--|
| * |  |  |
|   |  |  |
|   |  |  |

ANSWER: